

## Pohozaev identity for the Spectral Fractional Laplacian

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**Resumen.** In this talk, we present a Pohozaev identity for the Spectral Fractional Laplacian (SFL). This identity allows us to prove non-existence for certain semi-linear problems. The first work on non-local Pohozaev identities goes back to the influential paper by Ros-Otón and Serra in 2014, where they consider the Restricted Fractional Laplacian (RFL) on  $\mathbb{R}^N$ . However, in our setting, boundary behavior is very different and the integration by parts approach by Ros-Otón and Serra cannot be used. Instead, we use a spectral approach to obtain a new identity written as a Schur product in which we recover the classical Pohozaev identity for the Laplacian by means of a transition matrix.

**Palabras clave:** Semi-linear elliptic PDEs; Non-local operators; Pohozaev identity; Spectral Fractional Laplacian.

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**Agradecimientos.** I. Barrios-Cubas acknowledges financial support from grants PID2020-113596GB-I00, PID2023-150166NB-I00, RED2022-134784-T, all funded by MCIN/ AEI/10.13039/501100011033 (Ministry of Science and Innovation, Spain), and the “Severo Ochoa Programme for Centers of Excellence in R&D” (CEX2019-000904-S), and the financial support from the FPI-grant PRE2021-097207 (Spain).

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